Contribution ID: **200** Type: **Talk**

Long-Baseline Neutrino Oscillation Physics Sensitivities of the Hyper-Kamiokande Experiment

Friday, 5 August 2022 14:56 (18 minutes)

The Hyper-Kamiokande experiment has a rich long-baseline neutrino program, as well as a variety of other physics goals. The long-baseline program will utilize a world-class neutrino beam produced at the high-intensity J-PARC accelerator constrained by a suite of near detectors. The Hyper-Kamiokande detector is a ~185 kton fiducial volume water Cherenkov detector, located 295 km from the beam neutrino source. Hyper-Kamiokande long-baseline measurements will be sensitive to the leptonic CP violating phase, delta_CP, as well as the atmospheric oscillation parameters, sin^2theta_23 and Delta m^2_32. Combining the long-baseline and atmospheric neutrino measurements at the Hyper-Kamiokande detector will also allow for enhanced sensitivities, and in particular will help to resolve the neutrino mass ordering.

Attendance type

In-person presentation

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Session Classification: WG1: Neutrino Oscillations

Track Classification: WG1: Neutrino Oscillation Physics